

from said shells at said discharge position.

19. A low pressure dryer for granular or powdery material, comprising:

- a. a plurality of shells serially movable around a circuit along which said shells are filled emptied, heated and vacuum dried;
- b. means for moving said shells around said circuit for filling and emptying said shells and heating and vacuum drying of material in said shells;
- c. means for heating said shells prior to drying;
- d. means for sealing said shells for drying;
- e. means for drawing vacuum within said shells during drying; and
- f. means for emptying dried granular or powdery material from said shells after drying.

REMARKS

This invention provides batch processing methods and apparatus for continuously drying granular material preparatory to mixing or other material processing. The method and apparatus are non-labor intensive, more economical and low in cost relative to known systems, efficient in energy consumption and provide faster drying than heretofore known for the plastic resin molding and extrusion industries, especially for small and medium size molders and extruders.

In the invention, granular resin material is supplied to a container at a fill and heat position and heated there by introduction of heating air into the container. Vacuum is then drawn within the container to a preselected level for a time sufficient to evaporate moisture from the heated granular resin material to a desired degree of dryness. The granular resin material is then discharged from the container whereupon the process may be repeated.

The container is movable among the material filling and heating position, the vacuum drawing position and a discharge position about a closed circuit.

Most preferably, the container is a cylindrical shell, with the axis of the cylinder vertically oriented and with the container moving about an arc formed about a vertical axis outboard of the shell periphery.

Top and bottom plates preferably seal the cylindrical shell at the vacuum drawing position. Movement of the vertically-oriented cylindrical shells, of which there are preferably a plurality, about the closed circuit is preferably effectuated by pneumatically-driven piston-cylinder which rotate the shaft and thereby move the cylindrical shells about a desired arcuate path, resulting in economy of motion and minimum energy expenditure.

At the heating position, heated air passing through the granular resin material is maintained within a closed circuit and recycled through the granular resin material. Use of a plurality of shells, with separate shells being at the filling and heating

position, at the drying position and at the discharge position simultaneously results in shorter drying time, more efficient use of equivalent components and lower cost than known heretofore.

Enclosed herewith is a check in the amount of \$195.00 to cover the charge associated with the addition of five independent claims. In the event of any overpayment or underpayment, please credit or charge our Deposit Account No. 04-1406 accordingly. A duplicate copy of this letter is enclosed to facilitate such charging or crediting.

Respectfully submitted,



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Enclosures

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